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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,051	01/22/2002	Mark E. Epstein	BOC9-2000-0039 (180)	1351

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Gregory A. Nelson
Akerman Senterfitt
222 Lakeview Avenue, Fourth Floor
P.O. Box 3188
West Palm Beach, FL 33402-3188

EXAMINER

HIRL, JOSEPH P

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,051

Applicant(s)

EPSTEIN ET AL.

Examiner

Joseph P. Hirl

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-29 are pending in this application.
2. The claims and only the claims form the metes and bounds of the invention.
"Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

3. Examiner's Opinion:

Para 2 above applies. Query is a node point in a decision tree and is equivalently represented in the hybrid concept of neural trees by the binary configuration of a perceptron. To one of ordinary skill in the art, opposites are the mirror image of each other, knowing one means one knows the other, i.e. goodness and wrongness.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-11 are rejected under 35 USC 112, first paragraph because current case law (and accordingly, the MPEP) require such a rejection if a 101 rejection is given because when Applicant has not in fact disclosed the practical application for the invention, as a matter of law there is no way Applicant could have disclosed how to practice the undisclosed practical application. This is how the MPEP puts it:

("The how to use prong of section 112 **incorporates as a matter of law** the requirement of 35 U.S.C. 101 that the specification disclose as a matter of fact a practical utility for the invention.... If the application fails as a matter of fact to satisfy 35 U.S.C. 101, then the application also fails as a matter of law to enable one of ordinary skill in the art to use the invention under 35 U.S.C. § 112."); In re Kirk, '376 F.2d 936, 942, 153 USPQ 48, 53 (CCPA 1967) ("Necessarily, compliance with § 112 requires a description of how to use presently useful inventions, **otherwise an applicant would anomalously be required to teach how to use a useless invention.**"). See, MPEP 21107.01 (IV), quoting In re Kirk (emphasis added).

Therefore, claims 1-16 are rejected on this basis.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 1-29 are rejected under 35 U.S.C. 102(a) as being anticipated by Gentilli (IEEE 0-7803-6725-1/01, referred to as **Gentili**).

Claims 1, 17

Gentili anticipates identifying a deviation between a correct interpretation of a data item and an incorrect interpretation of said data item (**Gentilli**, p 506, Fig. 1; Examiner's Note (EN): para 2 above applies); in a decision network comprising a hierarchical set of nodes and leaves, determining a path of traversed nodes in said decision network resulting in said deviation, wherein said nodes correspond to queries (**Gentilli**, p 505, c 2, l 12-30; Fig. 1; EN: para 2 above applies; queries are decision

points and translated into a neural network, each neural node is making a decision based on the sum of inputs to produce a yes/no (binary alternative) at the output of the perceptron...i.e. answer to the question); calculating a measure of goodness at a node in said path using at least one new query as a replacement for an existing query to determine whether said measure of goodness improves using said at least one new query compared to said old query (**Gentilli**, p 507, c 1, l 1-20; Fig. 1; EN: para 2 above applies; to one of ordinary skill in the art, a measure of goodness is the generic inverse of a measure of wrongness); and if said measure of goodness improves, selecting said at least one new query and regrowing said decision network from said node down through said leaves using said at least one new query at said node (**Gentilli**, p 507, c 1, l 21-26).

Claims 2, 18

Gentili anticipates measure of goodness is a measure of conditional entropy or log likelihood (**Gentilli**, p 507, c 1, l 4; EN: para 2 above applies; Gentili uses a likelihood log function for an equivalent measure).

Claims 3, 19

Gentili anticipates regrowing step includes smoothing said decision network (**Gentilli**, p 507, c 1, l 21-26; EN: pruning is smoothing).

Claims 4, 20

Gentili anticipates testing said regrown decision network using said data item (**Gentilli**, p 507, c 1, l 21-26).

Claims 5, 21

Gentili anticipates measure of goodness is calculated at a node that is common to a path resulting in said correct interpretation and common to a path resulting in said incorrect interpretation (**Gentilli**, p 507, c 1, l 4).

Claims 6, 13, 16, 22, 29

Gentili anticipates decision network is a decision tree model (**Gentilli**, p 505, c 2, l 14-16).

Claims 7, 23

Gentili anticipates presenting at least a portion of said decision network in a graphical user interface wherein at least one node from at least one of said paths is distinguished from other nodes of said decision network (**Gentilli**, p 508, Table 1; p 508, c 1, l 15-19; EN: Table 1 is a graphical interface; computers are being used and to one of ordinary skill in the art, computers have graphical displays).

Claim 8

Gentili anticipates distinguishing at least one node of said first path from at least one node of said second path (**Gentilli**, p 506, c 2, l 18-40).

Claims 9, 25

Gentili anticipates distinguishing a node common to said first path and said second path (**Gentilli**, p 506, c 2, l 18-40).

Claims 10, 26

Gentili anticipates presenting decision network information selected from the group consisting of query information and training data information (**Gentilli**, p 505, c 2, l 12-30).

Claim 11

Gentili anticipates wherein if at least two new queries result in an improved measure of goodness, determining a measure of separation in said decision network using each of said queries resulting in said improved measure of goodness (**Gentilli**, p 506, c 2, l 51-54).

Claims 12, 28

Gentili anticipates in a decision network comprising a hierarchical set of nodes and leaves, identifying a path of nodes traversed through said decision network resulting in an interpretation of a data item, wherein said nodes correspond to existing queries (**Gentilli**, p 506, Fig. 1); calculating a measure of goodness at a node in said path using a new query as a replacement for one of said existing queries (**Gentilli**, p 507, c 1, l 1-20; p 506, Fig. 1); and if said new query results in an improved measure of goodness compared to said existing query, retraining said decision network using said new query at said node beginning with said node through said leaves of said decision network (**Gentilli**, p 506, Fig. 1).

Claim 14

Gentili anticipates graphical user interface configured to display one or more nodes of at least one path in a decision network resulting in a correct interpretation of a

data item (**Gentilli**, p 506, Fig. 1; p 508, Table 1; p 508, c 1, l 15-19; EN: Table 1 is a graphical interface; computers are being used and to one of ordinary skill in the art, computers have graphical displays).

Claim 15

Gentili anticipates configured to display one or more nodes of at least one path in said decision network resulting in an incorrect interpretation of said data item (**Gentilli**, p 508, Table 1; p 508, c 1, l 15-19).

Claim 24

Gentili anticipates distinguishing at least one node of said first path from at least one node of said second path (**Gentilli**, p 506, c 2, l 18-40).

Claim 24

Gentili anticipates if at least two new queries result in an improved measure of goodness, determining a measure of separation in said decision network using each of said queries resulting in said improved measure of goodness (**Gentilli**, p 506, Fig. 1; p 506, c 2, l 51; 507, c 1, l 1-14).

Conclusion

10. The prior art of record and not relied upon is considered pertinent to applicant's disclosure.

- Padmanabhan et al, IEEE 1063-6676
- Kil, U.S. Pub, 2002/0138492

- Marchisio, U.S. 6,510,406

11. Claims 1-29 are rejected.

Correspondence Information

12. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is (703) 305-1668. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anil Khatri can be reached at (703) 305-0282.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,
Washington, D. C. 20231;

or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7290 (for informal or draft communications with notation of "Proposed" or "Draft" for the desk of the Examiner).

Hand-delivered responses should be brought to:

Receptionist, Crystal Park II

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2121 Crystal Drive,

Arlington, Virginia.

A handwritten signature in black ink, appearing to read 'J. Hirl', with a stylized flourish at the end.

Joseph P. Hirl

March 29, 2004